CLAIMS

We claim:

1. A fuel gauge adapted for use with a fuel supply and an electronic equipment powered by a fuel cell, said fuel gauge comprises a property that is readable by an electrical circuit, wherein said property is related to the amount of fuel remaining in the fuel supply.

2. The fuel gauge of claim 1, wherein the fuel gauge is functional at any orientation of the fuel supply.

3. The fuel gauge of claim 1, wherein said property is an electrical capacitance between two nodes and wherein a first node is located at a position that moves as fuel is removed from the fuel supply.

4. The fuel gauge of claim 3, wherein a second node is located on the fuel cell.

5. The fuel gauge of claim 3, wherein a second node is located on the electronic equipment.

6. The fuel gauge of claim 3, wherein the first node is located on or in a liner containing the fuel and the liner is positioned within the fuel supply.

7. The fuel gauge of claim 1, wherein said property is a magnetic force between two poles and wherein a first pole is located at a position that moves as fuel is removed from the fuel supply.

8. The fuel gauge of claim 7, wherein a second pole is located on the fuel cell.

9. The fuel gauge of claim 7, wherein a second pole is located on the electronic equipment.

10. The fuel gauge of claim 7, wherein the first pole is located on or in a liner containing the fuel and the liner is positioned within the fuel supply.

11. The fuel gauge of claim 7, wherein a Hall gauge connected to the fuel gauge produces a voltage from the magnetic force and the voltage is readable by the electrical circuit.

12. The fuel gauge of claim 1, wherein said property is the resistance of a semi-conducting resistor.

13. The fuel gauge of claim 12, wherein the semi-conducting resistor comprises a thermistor.

14. The fuel gauge of claim 13, wherein the thermistor is located adjacent to the fuel.

15. The fuel gauge of claim 14, wherein the thermistor is located adjacent to a liner containing the fuel, and the liner is positioned within the fuel supply.

16. The fuel gauge of claim 13, wherein the thermistor is located within the fuel.

17. The fuel gauge of claim 13, wherein the electrical circuit sends an electrical current to the thermistor to gage the amount of remaining fuel.

18. The fuel gauge of claim 17, wherein the electrical current is sent intermittently.

19. The fuel gauge of claim 17, wherein the electrical current is sent continuously.

20. The fuel gauge of claim 1, wherein said property is the resistance of a bi-metal resistor.

21. The fuel gauge of claim 20, wherein the bi-metal resistor is a thermocouple.

22. The fuel gauge of claim 21, wherein the thermocouple is located adjacent to the fuel.

23. The fuel gauge of claim 22, wherein the thermocouple is located adjacent to a liner containing the fuel, and the liner is positioned within the fuel supply.

24. The fuel gauge of claim 21, wherein the thermocouple is located within the fuel.

25. The fuel gauge of claim 21, wherein the electrical circuit sends an electrical current to the thermocouple to gage the amount of remaining fuel.

26. The fuel gauge of claim 25, wherein the electrical current is sent intermittently.

27. The fuel gauge of claim 26, wherein the electrical current is sent continuously.

28. The fuel gauge of claim 1, wherein the electrical circuit is located in the fuel cell.

29. The fuel gauge of claim 1, wherein the electrical circuit is located in the electronic device.

30. The fuel gauge of claim 1, wherein the fuel supply is a fuel cartridge.

31. The fuel gauge of claim 1, wherein the fuel supply is selected from a group consisting of disposable cartridges, refillable cartridges, reusable cartridges, cartridges that reside inside the electronic device, cartridges that are outside of the electronic device, fuel tanks, fuel refilling tanks, and fuel containers.

32. The fuel gauge of claim 1, wherein said property is an oscillating magnetic field generated by an inductive sensor.

33. The fuel gauge of claim 32, wherein said oscillating magnetic field changes when an electrical conductor enters the field, and wherein the changes in the oscillating magnetic field correlates to the volume of remaining fuel.

34. The fuel gauge of claim 33, wherein the inductive sensor is positioned on the fuel cell or the electronic equipment and the electrical conductor is located at a position that moves as fuel is removed from the fuel supply.

35. The fuel gauge of claim 32, wherein a Hall gauge connected to the fuel gauge produces a voltage from the oscillating magnetic field and the voltage is readable by the electrical circuit.

36. A fuel gauge adapted for use with a fuel supply and an electronic equipment powered by a fuel cell, said fuel gauge comprises:

a first sensor associated with the fuel cartridge and is spaced a distance apart from a second sensor associated with the fuel cell or the electronic equipment, wherein the distance varies with the fuel level in the fuel cartridge and indicates the remaining fuel in the cartridge, and wherein the first and second sensors have a property readable by an electrical circuit.

37. The fuel gauge of claim 36, wherein a magnetic field is formed between the sensors.

38. The fuel gauge of claim 36, wherein a capacitance is formed between the sensors.

39. The fuel gauge of claim 36, wherein the first sensor is positioned adjacent to a fuel liner within the supply.

40. The fuel gauge of claim 39, wherein the first sensor is positioned on the fuel liner.

41. The fuel gauge of claim 36, wherein the first sensor is positioned proximate a spring pressuring a fuel liner within the cartridge.

42. The fuel gauge of claim 36, wherein the first sensor is positioned on the spring.

43. The fuel gauge of claim 36, wherein the second sensor is positioned in the fuel cell or in the electronic equipment.

44. The fuel gauge of claim 41, wherein the spring comprises a metal spring.

45. The fuel gauge of claim 41, wherein the spring comprises a foam.

46. The fuel gauge of claim 36, wherein the second sensor is positioned on or in the fuel supply.

47. The fuel gauge of claim 36, wherein the electrical circuit is positioned in the fuel cell or in the electronic equipment.

48. A fuel gauge adapted for use with a fuel supply and an electronic equipment powered by a fuel cell, said fuel gauge comprises an electrical resistance that is readable by an electrical circuit, wherein said the electrical resistance is related to the amount of fuel remaining in the fuel supply.

49. The fuel gauge of claim 48, wherein the electrical resistance is the resistance from a semi-conducting resistor.

50. The fuel gauge of claim 49, wherein the semi-conducting resistor is a thermistor.

51. The fuel gauge of claim 48, wherein the electrical resistance is the resistance from a bi-metal resistor.

52. The fuel gauge of claim 51, wherein the bi-metal resistor is a thermocouple.